



PATENT  
TH-2106 (US)  
NAF:SWT

#5

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[Signature]

AUG 7, 2003  
Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of )

Ronald Marshall Bass et al. )

Serial No. 09/910,696 )

Filed July 20, 2001 )

ANNULUS FOR ELECTRICALLY HEATED  
PIPE-IN-PIPE SUBSEA PIPELINE )

Group Art Unit: 3672

Examiner:

August 7, 2003

RECEIVED

AUG 11 2003

OFFICE OF PETITIONS

COMMISSIONER FOR PATENTS  
Alexandria, VA 22213-1450

Sir:

FEE AND INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.56 AND 1.97

It is respectfully requested that the documents listed on the attached Form PTO-1449 be considered by the Patent and Trademark Office in the above-entitled application and made of record therein. Full text copies of the relevant documents are enclosed.

For a foreign language document or documents, an English language translation is provided where it is readily available to Applicants' attorney. If no translation is available, an English language counterpart, where available, is provided or an English language abstract, where available, is provided.

FEE

The Commissioner is hereby authorized to charge to Deposit Account No. 19-1800, the fee set forth in 37 C.F.R. §1.17(p) associated with the filing of this Information Disclosure Statement.

08/02/2003 HBLANCO 00000022 191800 09910696  
02 FC:1806 180.00 DA

P. O. Box 2463  
Houston, Texas 77252-2463

Respectfully submitted,

Ronald Marshall Bass et al.

By [Signature]  
Attorney, Nellie A. Fisher  
Registration No. 47,563  
(713) 241-5315

NAFTH2106 IDS



FORM PTO-1449 (Modified)

ATTY. DOCKET NO.  
TH-2106 (US)APPLICATION NUMBER  
09/910,696LIST OF INFORMATION PROVIDED  
BY APPLICANTAPPLICANT  
Ronald M. Bass et al.

(Use several sheets if necessary)

FILING DATE  
7/20/2001GROUP ART UNIT  
3672

## REFERENCE DESIGNATION

## U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	AA	972,308	10/11/1910	Williamson			
	AB	1,231,202	6/26/1917	Saylor			
	AC	2,096,279	10/19/1937	Karcher	255	28	
	AD	2,178,720	2/23/1938	Daniels	219	47	
	AE	2,206,831	3/7/1938	Berthelsen	74	440	
	AF	2,217,857	4/17/1937	Byck	166	21	
	AG	2,224,403	12/10/1940	Lines	219	39	
	AH	2,306,831	12/29/1942	Proctor	219	39	
	AI	2,660,249	11/24/1953	Jakosky	166	17	

## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation Yes No	
	AL	103,122	13/4/1937	WO	27.8	07.6	X	
	AM	1,070,907 + Abst.	24/01/01	EP	F16L59	14		X
	AN	1,359,445	4/3/1972	WO	F16L25	00	X	
	AO	1,437,587	31/7/1974	WO	F16L 13	10	X	

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

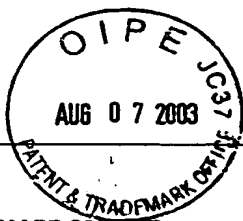
	AR	"Cable-Free Electrical Systems for the Oil to Gas Industry," Production Technologies Company, L.L.C., 600 Kenrick, Suite C-30; Houston, Texas 77060, advertisement, Copyright 1996, 6 pp.
	AS	"Dunbar in Depth," Offshore Engineer, Dec. 1994, 2 pp.

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Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	BA	2,678,377	5/11/54	Justiz	219	40	
	BB	2,714,930	8/9/1955	Carpenter	166	60	
	BC	2,757,738	8/7/1956	Ritchey	166	39	
	BD	2,851,197	9/9/1958	Colton	222	146	
	BE	2,982,354	4/26/1957	Green	166	60	
	BF	3,184,958	5/25/1965	Eaton	73	40.5	
	BG	3,388,724	6/18/1968	Mowell et al.	138	149	
	BH	3,423,570	1/21/1969	Trabilcy	219	301	
	BI	3,432,186	3/11/1969	Braun	285	53	

## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation Yes No	
	BL	1,532,730	18/10/1976	WO	F16L 25	01	X	
	BM	2,084,284	7/4/1982	GB	F16L 53	00	X	
	BN	569,815 + Abst.	16/09/77	SU	F3013A	27		X

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

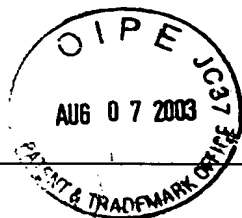
	BR	"Introduction to Direct Heating of Subsea Pipelines," overview by Statoil, Saga Petroleum, CSO Norge, Alcatel, Kabel Norge and EFI, Feb. 1988.
	BS	"Monolithic Pipeline Electrical Isolation Joints," HydroTech Systems, Inc., Engineered Pipeline Products, advertisement, Nov. 1996, 6 pp.
	BT	"New Double Pipe Insulated System (DPIS) Designed by Snamprogetti", Snamprogetti Offshore Division, Viale de Gasperi 16, San Donato Milanese, Milan, Italy, advertisement, 6 pp.

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**U.S. PATENT DOCUMENTS**

Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	CA	3,439,075	4/15/1969	Bauer et al.	264	45	
	CB	3,507,330	4/21/1970	Gill	166	248	
	CC	3,515,837	6/2/1970	Ando	219	10.49	
	CD	3,547,193	12/15/1970	Gill	166	248	
	CE	3,556,218	1/19/1971	Talley, Jr. et al.	166	265	
	CF	3,605,888	9/20/1971	Crowson et al.	166	248	
	CG	3,614,986	10/26/1971	Gill	166	303	
	CH	3,620,300	11/16/1971	Crowson	166	248	
	CI	3,630,038	12/28/1971	Ando	61	72.1	
	CJ	3,642,066	2/15/1972	Gill	166	248	
	CL	3,706,872	12/19/1972	Trabilcy	219	300	

**FOREIGN PATENT DOCUMENTS**

		Document No.	Date	Country	Class	Subclass	<u>Translation</u> Yes No	
	CL							

**OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)**

	CR	"Skin Effect Pipe Heating Systems," Thermo Systems Technology, Inc. (TST), Four Commerce Park Square, 23200 Chagrin Boulevard, Suite 600, Beachwood, Ohio 44122, Copyright 1991, advertisement, 4 pp.						
	CT	Stop Paraffin Build-up and Realize Your Well's Full Potential . . . Plug in Paratrol. International, Inc. (PTI), 15423 Vantage Parkway East, Houston, Texas 77032, advertisement, Copyright 1989, 6 pp.						

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	DA	3,789,188	1/29/1994	Rudbarg	219	301	
	DB	3,859,503	1/7/1975	Palone	219	278	
	DC	3,885,595	5/27/1975	Gibson et al.	138	155	
	DD	3,933,031	1/20/1976	Uhlarik	73	40.5 R	
	DE	3,935,632	2/3/1976	Maxson	29	455 R	
	DF	3,944,262	3/16/1976	Stiner et al.	285	53	
	DG	3,958,636	5/25/1976	Perkins	166	248	
	DH	3,975,617	8/17/1976	Othmer	219	300	
	DI	3,981,181	9/21/1976	Ochiai	73	40.5 R	

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		Document No.	Date	Country	Class	Subclass	Translation Yes No	
	DL							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	DR	"Tubing Casing Wireless Telemetry (Tucas System)," Schlumberger web page (1993?/ Jun. 1996), 16 pp.
	DT	A. Anselmi et al., "TTDPIS: A New Underwater Technology in the Field of Traced Insulated Pipelines," 1994 OMAE, vol. 5, Pipeline Technology, ASME, 1994, pp. 69-76.

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	EA	3,983,360	9/28/1976	Offerman	219	301	
	EB	4,010,799	3/8/1977	Kern et al.	166	248	
	EC	4,011,652	3/15/1977	Black	29	455 R	
	ED	4,017,102	4/12/1977	Henderson	285	41	
	EE	4,140,179	2/20/1979	Kasevich et al.	166	248	
	EF	4,142,093	2/27/1979	Offerman	219	301	
	EG	4,319,632	3/16/1982	Marr, Jr.	166	60	
	EH	4,401,162	8/30/1983	Osborne	166	248	
	EI	4,450,711	5/29/1984	Claude	73	40.5 R	
	EJ	4,496,174	1/29/1985	Mcdonald et al.	285	53	

## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation Yes No	
	EL							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	ER	Anonymous, "Insulated Pipe – Precision Engineering, June 2000, The Bayou Bulletin, Issue #8 from <a href="http://www.bayoupip.com/4News/Newsletters/08-4.htm">www.bayoupip.com/4News/Newsletters/08-4.htm</a> , 2 pages.						
	ES	Anonymous, "Insulated Technique to see first use in North Sea Development", May 17, 1993, Oil and Gas Journal vol. 91, Issue 20, page 61.						

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Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	FA	4,522,578	6/11/1985	Jameson et al.	425	110	
	FB	4,553,023	11/12/1985	Jameson et al.	219	301	
	FC	4,590,971	5/27/1986	Webster	138	149	
	FD	4,644,780	2/24/1987	Jeter	73	40.5	
	FE	4,645,906	2/24/1987	Yagnik et al.	219	301	
	FF	4,667,505	5/26/1987	Sharp	73	40.5 R	
	FG	4,684,786	8/4/1987	Mann et al.	219	297	
	FH	4,716,960	1/5/88	Eastlund et al.	166	60	
	FI	4,768,455	9/6/88	Maxson et al.	114	264	

## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation Yes No	
	FL							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	FR	B. J. Eastlund et al., "New System Stops Paraffin Buildup," Petroleum Engineer, Jan. 1989, 3 pp.
	FS	Brochure -Combi Pipe -the end of clogged pipelines, Alcatel Contracting Norway and Aker Engineering, 7 pp.

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## U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	GA	4,831,324	5/16/1989	Asakura et al.	324	57 R	
	GB	4,839,644	6/13/1989	Safinya et al.	340	854	
	GC	4,861,074	9/29/1989	Eastlund et al.	285	53	
	GD	4,874,925	10/17/1989	Dickenson	249	301	
	GE	4,970,467	11/13/1990	Burnett	324	637	
	GF	4,992,001	2/12/1991	Harrison	405	166	
	GG	4,996,879	3/5/1991	Kruka et al.	73	592	
	GH	5,072,622	12/17/1991	Roach et al.	73	40.5 R	
	GI	5,172,730	12/22/1992	Driver	138	104	
	GJ	5,189,374	2/23/1993	Burnett	324	534	

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	GL							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	GR	Brochure -World Wide Experience List -Compressed Gas Insulated Transmission Bus System Type CGIT, ABB Power T & D Company Inc., 30 Oak Street, Westborough, MA 01581, USA, 6 pp.
	GS	C. G. Langer, "Engineering Report--1979 Construction of the Cognac 12-inch Pipeline From Mississippi Canyon Block 194 to Southwest Pass East Bay Central Facilities, Offshore Louisiana," ES No. 74-82, Job No. 560513, Shell Oil Company, Pipeline Construction Department, *, 6 pp.

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Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	HA	5,270,661	12/14/1993	Burnett	324	527	
	HB	5,289,561	2/22/1994	Filho	392	478	
	HC	5,421,675	6/6/1995	Brown et al.	405	170	
	HD	5,464,307	11/7/1995	Wilkins	405	166	
	HE	5,490,562	2/13/1996	Arnold	166	267	
	HF	5,605,798	2/25/1997	Koster	435	6	
	HG	5,801,953	9/1/1998	Thoma et al.	364	487	
	HH	5,836,719	11/17/1998	Martin et al.	405	166	
	HI	5,905,194	5/18/1999	Strong	73	40.5	

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	HL							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	HS	Compressed Gas Insulation Transmission Bus Ducts, ABB Power T&D Company, CGIT/PB Division, Westborough, MA, US 22 pages.
x	HT	DeLuca, "Field of Dreams", April 1, 2001, Offshore Engineering, form <a href="http://www.online.com/news/features/oe/20010401.Fields_0.520.asp">www.online.com/news/features/oe/20010401.Fields_0.520.asp</a> , 9 pages.

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Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	IA	6,000,438	12/14/1999	Ohm	138	149	
	IB	6,049,657	4/11/2000	Sumner	392	469	
	IC	6,058,979	5/9/2000	Watkins	138	149	
	ID	6,114,857	9/5/2000	Kohl	324	534	
	IE	6,179,523	1/30/2001	Langner et al.	405	169	
	IF	6,278,095	8/21/2001	Bass et al.	219	629	

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	IL							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

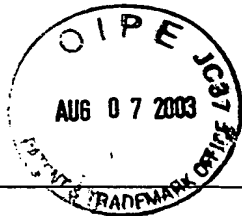
	IR	F. Aarseth and E. Bentsen, "Heating of Pipelines, and Power Supply to Subsea Electrical Equipment," Aker Engineering a.s. A. Bjørnstad and B. Knutsen, Alcatel Contracting Norway a.s., DOT 1995, 23 pp.
	IS	F. R. Newbold and T. K. Perkins, "Wellbore Transmission of Electrical Power," The Journal of Canadian Petroleum Technology, Jul.-Sep. 1978, Montreal, pp. 3-52.

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	<b>APPLICANT</b> Ronald M. Bass et al.	
	<b>FILING DATE</b> 7/20/2001	<b>GROUP ART UNIT</b> 3672

REFERENCE DESIGNATION		U.S. PATENT DOCUMENTS					
Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	JA	6,292,627	9/18/2001	Gilchrist, Jr. et al.	392	311	
	JB	6,305,429	10/23/2001	Welch et al.	138	149	
	JC	6,315,497	11/13/2001	Wittman et al.	405	158	
	JD	6,364,401	4/2/2002	Kim	296	194	
	JE	6,371,693	4/16/2002	Kopp et al.	405	158	
	JF	6,382,259	5/7/2002	Codling	138	149	
	JG	6,509,557	1/21/2003	Bass	219	772	
	JH	US 2003/0015436 A1	1/23/2003	Bass et al.	205	740	
	JI	US 2003/0015519 A1	1/23/2003	Stone, Jr.	219	494	

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OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)							
	JR	F. G. Bosch, K. J. Schmitt, and B. J. Eastlund, "Evaluation of Downhole Electric Impedance Heating systems for Paraffin Control," Paper No. PCIC-90-34 presented at Industry Applications Society 37th Annual Petroleum and Chemical Industry Conference, Houston, Texas, Sep. 10-12, pp. 223-227.					
	JS	Fred S. Epstein and Gary L. White, "Understanding Impedance Heating," Chemical Engineering, May 1996, pp. 112-118.					
	JT	Gaylord, N.G., Gaylord Associates, Newark, New Jersey, "Polymers -Part I. Polyalklene Oxides and Other Polyethers"; Interscience Publishers: New York-London-Sydney, pp. 9-80.					

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	KB	US 2003/0017007 A1	1/23/2003	Bass et al.	405	154.1	
	KC	US 2003/0020499 A1	1/30/2003	Bass	324	721	

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		Document No.	Date	Country	Class	Subclass	Translation Yes No
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OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	KS	"General Product Specification--Pipeline Insulating Joint," HydroTech Systems, Engineered Pipeline Products, advertisement, pp.					
	KT	H. Collins and M.A.R. Lyle, Progress Reported in Design of Reelable Insulated Subsea Flow Lines," Oil and Gas Journal", Sept. 24, 1990, p. 102-106.					
	KU	K. H. Akfhampour, "A Novel Approach to Solving Downhole Fluid Flow Problems by Use of an Electric Heating System", Paper no. PCIC-85-35, 12 pp.					
	KV	Krevelen, D. W., Univ. of Technology. Delft. The Netherlands, "Properties of Polymers", 3.sup.rd Edition (Revised), Elsevier; Amsterdam-Oxford-New York-Tokyo, 1990; pp. 641-653.					
	KW	M. I. Mollison, "Foam Insulation Gets First Reeled Installation off Australia," Oil and Gas Journal, May 18, 1992, pp. 80-82.					
	KX	Monobloc Insulating Joints Type "IK".					

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

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- This is not a representation that a search has been made.



FORM PTO-1449 (Modified)  LIST OF INFORMATION PROVIDED BY APPLICANT  (Use several sheets if necessary)	<b>ATTY. DOCKET NO.</b> TH-2106 (US)	<b>APPLICATION NUMBER</b> 09/910,696
	<b>APPLICANT</b> Ronald M. Bass et al.	
	<b>FILING DATE</b> 7/20/2001	<b>GROUP ART UNIT</b> 3672

REFERENCE DESIGNATION		U.S. PATENT DOCUMENTS					
Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	LA						
	LB						
	LC						

FOREIGN PATENT DOCUMENTS							
		Document No.	Date	Country	Class	Subclass	Translation Yes No
	LL						

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)		
	LM	N. B. Carson, "A New Method for Heat Tracing Long Pipelines," ASME, 74-Pet-35, paper presented at the Petroleum Mechanical Engineering Conference, Dallas, Texas, Sep. 15-18, 1974, pp. 2-4.
	LN	Protest Document, Dec. 8, 1987 letter of Andrew W. Marr, Jr. to the Assistant Commissioner of Patents requesting issuance of U.S. Patent 4,716,960 available in the file history as of January 5, 1988.
	LO	R. Wash, "Electromagnetic Energy Helps Recovery," Gulf Coast Oil World,, Jun. 1986, pp. 18-19.
	LP	"Taking Induction Heating Underwater," Process Heating, Jul./Aug. 1995, 1 p.
	LQ	The Electrothermic Co. (TEC), 4916 Bear Lane, P.O. Box 4227, Corpus Christi, TX 78408 advertisement/sales brochure, 4 pp.

EXAMINER	DATE CONSIDERED
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FORM PTO-1449 (Modified)

ATTY. DOCKET NO.  
TH-2106 (US)APPLICATION NUMBER  
09/910,696LIST OF INFORMATION PROVIDED  
BY APPLICANTAPPLICANT  
Ronald M. Bass et al.

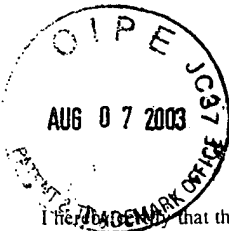
(Use several sheets if necessary)

FILING DATE  
7/20/2001GROUP ART UNIT  
3672

REFERENCE DESIGNATION		U.S. PATENT DOCUMENTS						
Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate	
	MA							
FOREIGN PATENT DOCUMENTS								
		Document No.	Date	Country	Class	Subclass	Translation Yes No	
	MD							
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)								
	ME	Anecdote – "Thermo Systems Under River Crossings" discussed in Supplemental Information Disclosure Statement filed on June 22, 2000 for US Patent Application SN 08/921,737, filed August 27, 1997, entitled, "Method for Maintaining Well Fluids Within a Shut-In Subsea Pipeline."						
	MF	Anecdote – "Fuel Oil Between Buildings" discussed in Supplemental Information Disclosure Statement filed on June 22, 2000 for US Patent Application SN 08/921,737, filed August 27, 1997, entitled, "Method for Maintaining Well Fluids Within a Shut-In Subsea Pipeline."						
	MG	Anecdote – "Asphalt Transfer Liner from Tank Cars et al." discussed in Supplemental Information Disclosure Statement filed on June 22, 2000 for US Patent Application SN 08/921,737, filed August 27, 1997, entitled, "Method for Maintaining Well Fluids Within a Shut-In Subsea Pipeline."						
	MH	Production Technologies Company Invention Disclosure of R. M. Bass dated July 24, 1986, "Disclosure for Controlled Paraffin Deposition in Subsea Pipelines" as discussed in Supplemental Information Disclosure Statement filed on June 22, 2000 for US Patent Application S/N No. 08/921,737, filed August 27, 1997, entitled "Method for Maintaining Well Fluids Within a Shut-In Subsea Pipeline."						
	MI	Purported Invention Disclosure of Production Technologies Company, L.L.C. (PTC) by Bernard J Eastlund and John Haeber, dated April 28, 1995. 'Apparatus for Introducing Electric Current into and Offshore Pipeline.' 4pp as discussed in Supplemental Information Disclosure Statement filed on June 22, 2000 for US Patent Application S/N No. 08/921,737, filed August 27, 1997, entitled "Method for Maintaining Well Fluids Within a Shut-In Subsea Pipeline."						
EXAMINER				DATE CONSIDERED				

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2. This is not a representation that a search has been made.



PATENT  
TH-0844 N (US)  
MAS:KNL

I hereby certify that this correspondence is being deposited  
with the United States postal service as first-class mail in  
an envelope addressed to: Assistant Commissioner for Patents,  
Washington, D.C. 20231 on or before:

June 22, 2000  
(Date of Deposit)  
Mark A. Smith 6/22/00  
(Date of Signature)

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of )  
)  
RONALD M. BASS ET AL )  
)  
Serial No. 08/921,737 )  
)  
Filed August 27, 1997 )  
)  
METHOD FOR MAINTAINING WELL FLUIDS )  
WITHIN A SHUT-IN SUBSEA PIPELINE )  
)

Group Art Unit:

Examiner: E. Lillis

June 22, 2000

ASSISTANT COMMISSIONER FOR PATENTS  
Washington, DC 20231

Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR 1.56 AND 1.97

It is respectfully requested that the documents listed on the attached Form PTO-1449  
(Modified) be considered by the Patent and Trademark Office in the above-entitled application and  
made of record therein.

This document presents additional disclosures in an organized form prepared for the  
convenience of the Examiner.

This submission further supplements the Information Disclosure Statement Under 37  
CFR 1.56 and 1.97 filed November 24, 1997.

### Pipe-in-Pipe Heating

- 2,224,403 has a short section of pipe-in-pipe at pipes 17 and 18.

### Electrical Pipeline Heating and Electrical Feed

Additional references on electrical heating of pipes or pipelines include:

- 5,289,561 discloses heating a flexible pipe with electricity using a cable return.
- 4,645,906 uses an internal copper conductor to heat a pipe which is external to the copper conductor.
- 2,851,197 heats pipe with a system that uses a center feed and insulating elements 16 and 17.
- 2,306,831 also uses a center fed circuit.

### Electrical Insulation

- *Properties of Polymers: Their Estimation and Correlation with Chemical Structure* discusses generally char formation issues for polymers.
- *Polyethers: Part I. Polyalkylene Oxides and Other Polymers* discusses polyoxymethylene (Delrin) thermal degradation. The absence of char formation may be inferred from text noting the almost complete loss of weight on heating the polymer in a vacuum. Other texts may be more explicit on favorable char formation characteristics of Delrin but, in any event, the use of Delrin is not broadly claimed apart from other limitations of the claims.

### Pipe-in-Pipe Heating

GB 2,084,284 discloses a pipe within a pipe electrical heating system in the context of a subsea pipeline.

GB 2,084,284 subsumes anecdotal issues for which we have no contemporaneous publication or documentation. The Applicants pursued rumors of electrical heating with prior pipe-in-pipe systems, uncovering several stories. Many are not offshore pipeline applications at all; none reported any joint analogous to that deployed in the illustrative embodiment of the present application. These anecdotal issues include:

- Short pipe-in-pipe electrical heating systems which have been applied by Thermo Systems Technology for deployment under river crossings. (No document, but Ref. GR on PTO-1449)



- A fuel oil line between two buildings spaced several hundred yards apart that used electric pipe-in-pipe heating. The heating facilitated flow of fuel oil for heating purposes during cold months. (No document, but Ref. FS on PTO-1449)
- Gary White, author of Understanding Impedance Heating offered background on pipe-in-pipe heating to one of the Applicants as follows:

My experience with pipe-in-pipe technology has been exclusively in tanker car heater systems. We Utilize a 2" schedule 80 pipe inside a 4" schedule 40 pipe at a length of 42 feet. INDEECO completed their design in 1995 and has produced several installations. Another manufacturer of these systems that has greater experience is Bob Yurkanin of Electran. My understanding is Bob has been providing these systems for in excess of ten years.

In addition Mr. White described some long distance pipe-in-pipe work that was entering "very preliminary stages" in 1998 (well after the effective filing date of the present application). (No contemporaneous document, but Ref. FT on PTO-1449).

- Evaluation of Downhole Electrical Impedance Heating Systems for Paraffin Control in Oil Wells is now noted as also referencing control gas hydrates in gas wells.
- Purported invention disclosure by Eastlund and Haeber dated April 28, 1995. This document is not a publication. It is filed separately, with the present Supplemental Information Disclosure Statement, to request special treatment pursuant to MPEP 724.02. It is listed on PTO-1449 (Modified) as Ref. FR. This document is characteristic of the inventorship dispute between Shell and PTC. Both this and an unnotarized prior draft are after our investigation show Shell disclosed the idea to PTC. This document also references how PTC asserts the present invention is related to its prior patent for heating tubing in a well bore. These assertions of infringement, etc., were previously disclosed to the Examiner.

### **Induction and Impedance Heating**

Additional references on electrical heating of pipes or pipelines with impedance systems include:

- Taking Induction Heating Underwater
- Understanding Impedance Heating

Some of these emphasize subsea applications:

- Heating of Pipelines, and Power Supply to Subsea Electrical Equipment
- Combi Pipe (Alcatel Contracting Norway brochure) is an undated brochure, but we have been advised that this system was demonstrated as early as 1993.
- Introduction to Direct Heating of Subsea Pipelines is dated Feb. 1998, but we are advised that Statoil had demonstrated such a system as disclosed therein prior to the Applicants' conception of the present invention.
- Why Use Skin Effect Pipe Heating? is a Thermo Systems Technology brochure. Though not discussed in this brochure, Applicants have been advised that this system was deployed in an offshore application.
- Disclosure for Controlling Paraffin Deposition in Subsea Flowlines by R.M. Bass, dated July 24, 1986. This is not a printed publication. It is a disclosure by one of the inventors of the present application at a time when he worked for PTC. Mr. Bass would have no duty of assignment to Shell for this work. Applicants do not believe this disclosure to be relevant, but believe the Examiner should have the opportunity to see it as it was cited to Shell in connection with the unresolved inventorship dispute referenced in one of the earlier Disclosure Statements. This document is filed separately, with the present Supplemental Information Disclosure Statement to request special treatment pursuant to MPEP 724.02. It is listed on Form PTO-1449 (Modified) as Ref. FS.

#### **Pipe-in-Pipe Thermal Insulation**

- New Double Pipe Insulated System (DPIS) Designed by Snamprogetti discloses an offshore pipeline having a pipe-in-pipe configuration for thermal insulation, including filling the annular cavity with polyurethane foam. This document is undated but Applicants have been informed that this system precedes their conception of the present invention.

### Coaxial Bus Ducts

Applications of extremely high voltage and current have used coaxial bus ducts in the transmission of power. An example of such an application is illustrated:

- Compressed Gas Insulated Transmission Bus Ducts (Ref. CS) and World wide Experience List—Compressed Gas Insulated Transmission Bus System Type CGIT describe a general class of power transmission fixtures. Centalizers are also illustrated. These describe some systems installed as early as the 1970s and precede the Applicants' invention.

### Insulated Joints and Signals

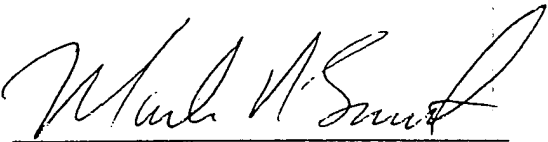
Additional insulated joints and signal systems are disclosed as follows:

- Australia 103,122 discloses an insulative joint for passing electrical current into beer as it is drawn from a keg.
- US 3,184,958 discloses a pipe-in-pipe conduit system that provides for the passage of monitoring lines for sensing leaks. Filling the annulus with inert, low moisture gas is also disclosed.
- US 4,839,644 discloses a pipe-in-pipe method and system for communicating signals and low (instrumentation level) power transmission in a cased borehole having a tubing. Commercialization of this system is known as the Tucatran or Tucas system. See the reference from the Schlumberger web page. Though dated June 1996, Applicants have been advised that this was used at least as early as 1993.

The Examiner is requested to fully consider this information and to indicate consideration on the attached PTO-1449 (Modified) by initialing next to each item submitted by the Applicants. No representation is made or intended that a search has been made or that no better art than that listed exists.

Respectfully submitted,

RONALD M. BASS ET AL

By: 

Their Attorney, Mark A. Smith  
Registration No. 30,220  
(713) 241-2094

P. O. Box 2463  
Houston, TX 77252-2463

Attachments

FORM PTO-1449 (Modified)

AUG 07 2003

ATTY. DOCKET NO.  
TH-0844N (US)CITATION NUMBER  
US/921.737

LIST OF INFORMATION PROVIDED  
BY APPLICANT  
(Use several sheets if necessary)

APPLICANT  
Robert H. Wittman et al

FILING DATE  
August 27, 1997

GROUP ART UNIT

## REFERENCE DESIGNATION

## U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	AA	2,224,403	12/10/40	H. A. Lines	219	39	
	AB	2,306,831	12/29/42	J. R. Proctor	219	39	
	AC	2,851,197	9/9/58	G. W. Colton	222	146	
	AD	4,645,906	2/24/87	C. M. Yagnik et al	219	301	
	AE	5,289,561	2/22/94	F. H. Costa	392	478	11/1/91
	AF	4,839,644	6/89	Safinya et al.	340	854	
	AG						
	AH						
	AI						

## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation Yes No	
	AL	103,122	4/37	Australia	27.8	07.6		
	AM	2,084,284	4/82	GB	F16L	53/00		
	AN							
	AO							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	AR	Krevelen, D. W., Univ. of Technology, Delft, The Netherlands, " PROPERTIES OF POLYMERS " , 3 <sup>rd</sup> Edition (Revised), Elsevier: Amsterdam-Oxford-New York-Tokyo, 1990; pages 641-653.
	AS	Gaylord, N. G., Gaylord Associates, Newark, New Jersey, " POLYETHERS - Part I. Polyalkylene Oxides and Other Polyethers " : Interscience Publishers; New York-London-Sydney, pages 9-80.
	AT	Brochure - WHY USE SKIN EFFECT PIPE HEATING? Thermo Systems Technology, Inc. Four Commerce Park Square, 23200 Chagrin Boulevard, Suite 600, Beachwood, Ohio 44122, Copyright 1991, 2 pp.

EXAMINER

DATE CONSIDERED

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FORM PTO-1449 (Modified)

ATTY. DOCKET NO.  
TH-0844N (US)APPLICATION NUMBER  
J/921.737

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(Use several sheets if necessary)

APPLICANT:

FILING DATE

GROUP ART UNIT

## REFERENCE DESIGNATION

## U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	BA						
	BB						
	BC						
	BD						
	BE						
	BF						
	BG						
	BH						
	BI						

## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation	
							Yes	No
	BL							
	BM							
	BN							
	BO							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

BR	F. G. Bosch et al. "Evaluation of Downhole Electric Impedance Heating Systems for Paraffin Control in Oil Wells." Paper No. PCIC-90-34, 1990, presented at Industry Applications Society 37 <sup>th</sup> Annual Petroleum and Chemical Industry Conference, Houston, Texas Sept. 10-12, 1990, pp. 223-227.
BS	F. Aarseth and E. Bentsen, "Heating of Pipelines, and Power Supply to Subsea Electrical Equipment," Aker Engineering a.s A. Bjørnstad and B. Knutsen, Alcatel Contracting Norway a.s., DOT 1995, 23 pp.
BT	"Taking Induction Heating Underwater," <u>PROCESS HEATING</u> , July/August 1995, 1 p.

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FORM PTO-1449 (Modified)

ATTY. DOCKET NO.  
TH-0844N (US)APPLICATION NUMBER  
921.737LIST OF INFORMATION PROVIDED  
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(Use several sheets if necessary)

APPLICANT

FILING DATE

GROUP ART UNIT

## REFERENCE DESIGNATION

## U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	CA						
	CB						
	CC						
	CD						
	CE						
	CF						
	CG						
	CH						
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## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation	
							Yes	No
	CL							
	CM							
	CN							
	CO							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	CR	Fred S. Epstein and Gary L. White. "Understanding Impedance Heating." <u>Chemical Engineering</u> . May 1996, p. 112-118.
	CS	"Tubing Casing Wireless Telemetry (Tucas System)." Schlumberger web page (1993?/June 1996). 16 pp. (See text of Supplemental Information Disclosure Statement re supposed date of technology described.)
	CT	Brochure - World Wide Experience List - Compressed Gas Insulated Transmission Bus System Type CGIT. ABB Power T & D Company Inc., 30 Oak Street, Westborough, MA 01581, USA. 6 pp. (Describes work from 1972, dated 10/96. See text of Supplemental Information Disclosure Statement re supposed date of technology described.)

EXAMINER

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FORM PTO-1449 (Modified)  LIST OF INFORMATION PROVIDED BY APPLICANT (Use several sheets if necessary)	ATTY. DOCKET NO. TH-844N (US)	APPLICATION NUMBER 08/921,737
	APPLICANT	
	FILING DATE	GROUP ART UNIT

REFERENCE DESIGNATION		U.S. PATENT DOCUMENTS					
Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	DA						
	DB						
	DC						
	DD						
	DE						
	DF						
	DG						
	DH						
	DI						

FOREIGN PATENT DOCUMENTS								
		Document No.	Date	Country	Class	Subclass	Translation	
							Yes	No
	DL							
	DM							
	DN							
	DO							

		OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
	DR	Compressed Gas Insulated Transmission Bus Ducts, ABB Power T&D Company, CGIT/IPB Division, Westborough, MA USA, 22 pp. (Undated. Describes work from 1972. See text of Supplemental Information Disclosure Statement re supposed date of technology described.)
	DS	Brochure - New Double Pipe Insulated System (DPIS) Designed by Snamprogetti, Snamprogetti Offshore Division, 6 pp. (See text of Supplemental Information Disclosure Statement re supposed date of technology described.)
	DT	Brochure - Combi Pipe - the end of clogged pipelines. Alcatel Contracting Norway and Aker Engineering, 7 pp. (Undated. See text of Supplemental Information Disclosure Statement re supposed date of technology described.)

EXAMINER	DATE CONSIDERED
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FORM PTO-1449 (Modified)

ATTY. DOCKET NO.  
TH0844N (US)PUBLICATION NUMBER  
921.737LIST OF INFORMATION PROVIDED  
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APPLICANT

FILING DATE

GROUP ART UNIT

## REFERENCE DESIGNATION

## U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Patentee	Class	Subclass	Filing Date if Appropriate
	FA						
	FB						
	FC						
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	FG						
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	FI						

## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation Yes No	
	FL							
	FM							
	FN							
	FO							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

FR	" Introduction to Direct Heating of Subsea Pipelines." overview by Statoil, Saga Petroleum, CSO Norge, Alcatel, Kabel Norge and EFI, Feb. 1998. (Undated. See text of Supplemental Information Disclosure Statement re supposed date of technology described.)
FS	Anecdote - Fuel Oil Between Buildings (See text of Supplemental Information Disclosure Statement.)
FT	Anecdote - Asphalt Transfer Liner from Tank Cars et al. (See text of Supplemental Information Disclosure Statement.)

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	GL							
	GM							
	GN							
	GO							

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	GR	Anecdote - Thermo Systems under river crossings. (See text of Supplemental Information Disclosure Statement.)
	GS	Purported Invention Disclosure by Bernard J. Eastlund and John Haeber, Production Technologies Company, L.L.C. (PTC) dated April 28, 1995. "Apparatus for Introducing Electric Current into an Offshore Pipeline." 4 pp. (See discussion in the Supplemental Information Disclosure Statement. Note also filed pursuant to MPEP 724.02.)
	GT	Production Technologies Company Invention Disclosure of R. M. Bass dated July 24, 1986. "Disclosure for Controlling Paraffin Deposition in Subsea Flowlines." (See discussion in the Supplemental Information Disclosure Statement. Note also filed pursuant to MPEP 724.02.)

EXAMINER

DATE CONSIDERED

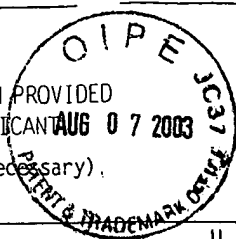
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ATTY. DOCKET NO.

LOCATION NUMBER

APPLICANT

FILING DATE

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	HD						
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	HF						
	HG						
	HH						
	HI						

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							Yes	No
	HL							
	HM							
	HG							
	HO							

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